follow-up consultations. The hands were classified according to their appearance: the position of the wrist and fingers (Keenan and al.). Surgery complications were sought.
*Results* Mean follow-up was 47 months. Preoperatively all hands were classified type 5 (closed hand: no distance between palm and pulp).
Postoperatively 38% of patients have type 1 hand (wrist in neutral position, metacarpophalangeal joints [MCP] and proximal interphalangeal [PIP] at 20° of flexion) and 46% type 2 hand (fingers are more flexed [MCP and PIP at 40° of flexion]), with good cosmetic appearance. None of them have hygienic problems. Mean House score increased from 0 to 0.9, with 7 patients improved.
Four patients had an attitude of supination of the forearm, 10 had an intrinsic-plus deformity and 6 had swan neck deformity of the finger. Secondary procedures had to be made.
*Conclusion* This transfer gives satisfactory results on the opening of the hand but with significant complications. Intrinsic spasticity may be unmasked. Accessories pronator muscles release, while the biceps is spastic, can lead to an attitude of supination of the forearm, which causes functional and esthetic problems.
*Keywords* Adult; Hemiplegia; Spastic hand; Tendons/surgery
*Disclosure of interest* The authors have not supplied their declaration of conflict of interest.

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## Locomotor asymmetry in post-stroke individuals: Why and how to use the split-belt treadmill to improve the gait performance

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*Introduction* The recovery of gait symmetry post-stroke tends to be more challenging compared to other functional deficits when using conventional therapy. However, investigations on walking at unequal speeds on a split-belt treadmill have revealed improvements in symmetry of spatial and temporal gait parameters.
*Objective* The main objective of this study was to identify the causes of changes in spatio-temporal parameters by quantifying net joint moments and muscular levels of effort in the lower limbs during different walking conditions on a split-belt treadmill.
*Methods* Twenty individuals with chronic stroke and a mean age of 49 (± 13) years and 10 age-matched controls walked on an instrumented split-belt treadmill under three gait periods: (1) baseline (tied-belt); (2) adaptation (split-belt); and (3) post-adaptation (tied-belt). Participants post-stroke performed the protocol with the paretic and non-paretic leg on the faster belt when belts were split. Kinematic data were recorded with the Optotrak system and ground reaction forces were collected via the instrumented split-belt treadmill. The dynamic inverse gave the joint moments while levels of effort were assessed with the muscular utilization ratio (ratio of walking moment relative to the muscle's maximal capability). Repeated measures ANOVA and *t*-tests were used to compare the variables during the three periods. Pearson correlations were used to assess the relationships between asymmetries in these parameters.
*Results* The condition with the shorter step on the fast belt improved the step length symmetry. Placing the paretic limb on the slow belt increased the plantar flexion moment in post-adaptation and that such increase was correlated with the increase in controlateral step length. A more symmetrical gait pattern (temporal or spatial) following walking on the split-belt treadmill required high levels of effort (over 85%) in paretic plantar flexors. Results also revealed that healthy individuals and patients had different ability to detect asymmetry.
*Discussion/Conclusion* These results suggest that muscle strength and muscular level of effort, mainly in paretic plantar flexors, need to be considered to use the split-belt treadmill in the adaptation (split-belt) period. The classification of patients into subgroups according to their sensorimotor deficits and gait asymmetries is an important aspect to consider with this type of training.
*Keywords* Locomotor asymmetry; Level of effort; Perception; Stroke; Biomechanics; Rehabilitation
*Disclosure of interest* The authors have not supplied their declaration of conflict of interest.

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# Posters

### P041-e

## Anesthetic blocks: Key to lower limb spasticity management in developing countries (Tunisia)

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*Introduction* Anesthetic blocks are used by many teams for assessing spasticity and its complications. However, this utilization is still restricted.
Our objective was to specify the interest of anesthetic blocks in therapeutic decision and management of spasticity in our country where conditions are limited.
*Materials and methods* A prospective study including 84 patients with spasticity in their lower limb. A clinical evaluation was made before and after the block with a determination of spasticity, a measurement of articular amplitudes, a quotation of voluntary control and a functional evaluation.
*Results* We did 108 blocks. The injected sites were dominated by the posterior tibial nerve (63 blocks). We noted a gain from one to three points in the score Aschworth and from 19 to 22° in the articular amplitudes. The results obtained allow optimal therapeutic orientation. Botulinum toxin was indicated in hamstrings in 2 cases, in adductors in 20 cases and in soleus and/or in gastrocnemius in 64 cases. Ten orthopedic surgical procedures were indicated. Neurotomy of the tibial nerve was performed in two cases. The results of the neurotomy 1 year after surgery were similar to that observed by the block.
*Discussion* The anesthetic blocks take still an important place in the assessment of spastic patient. In fact, they give us both a differential diagnosis (between spasticity and retraction) and an idea about prognosis (shows us the effect of an eventual definitive treatment for a short period of time). This will give us the opportunity to choose the least expensive means of therapy which can be available in our country. It allows us to take a new decisional diagram not only scientific but also adapted to our real situation.
*Keywords* Spasticity; Motor blocks; Evaluation; Therapeutic decision
*Disclosure of interest* The authors have not supplied their declaration of conflict of interest.